

REMARKS

Claims 1-37 are currently pending. Claims 3, 10, 11, 12, 15, and 18 have been amended to overcome the objections made by the Patent Office. Claims 19-37 have been added to enhance the scope of patent coverage and are supported by original claim 1, figures 3 and 4, and page 5, lines 5-12, page 6, line 6, page 7, lines 11-23, and page 8, line 22, through page 9, line 1, of the specification. It is respectfully submitted that no new matter has been added.

The Patent Office rejected claims 1-3, 5, and 7-18 under 35 U.S.C. 103(a) as being unpatentable over Sasaki, U.S. Patent No. 5,483,679, in view of Wolff et al., "Microwave Engineering and System Applications," pages 214-222, published by John Wiley & Son, Inc., in 1988.

Claim 1 recites "A transceiver, comprising a TX path mixer that up converts a signal to be transmitted, a RX path mixer that down converts a received signal, and a local oscillator having an output providing a mixing frequency for each of said TX and RX mixers; **further comprising a directional coupler comprising an input node coupled to said output of said local oscillator and further comprising a first output node coupled to said TX path mixer and a second output node coupled to said RX path mixer.**"

Claim 13 recites "A method for generating transceiver signals, comprising up converting a signal to be transmitted via a TX path mixer, down converting a received signal via a RX path mixer, providing a local oscillator having an output providing a mixing frequency for each of said TX and RX mixers; **coupling the output of said local oscillator to an input node of a directional coupler, and coupling said TX path mixer to a first output node of said directional coupler and coupling said RX path mixer to a second output node of said directional coupler.**"

Claim 19 recites "A device, comprising: a radio frequency transceiver comprising: a TX path mixer that up converts a signal to be transmitted; a RX path mixer that down converts a received signal; a local oscillator having an output providing a mixing frequency for each of said TX and RX mixers; and **a directional coupler comprising an input node coupled to said output of said local oscillator and further comprising a first output node coupled to said TX path mixer and a second output node coupled to said RX path mixer.**"

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Claim 27 recites “A circuit comprising: a TX path mixer that up converts a signal to be transmitted; a RX path mixer that down converts a received signal; a local oscillator having an output providing a mixing frequency for each of said TX and RX mixers; and **a directional coupler comprising an input node coupled to said output of said local oscillator and further comprising a first output node coupled to said TX path mixer and a second output node coupled to said RX path mixer.**”

Claim 36 recites “A device comprising: first means for mixing a first signal with a mixing frequency to up convert the first signal for transmission; second means for mixing a second signal with the mixing frequency to down convert the second signal that has been received; and **means for generating the mixing frequency; and means for coupling, the coupling means providing isolated paths for providing the mixing frequency to the first and second means.**”

Sasaki does not disclose or fairly suggest a directional coupler comprising an input node coupled to said output of said local oscillator and further comprising a first output node coupled to said TX path mixer and a second output node coupled to said RX path mixer. Sasaki shows a common local oscillator 20 that supplies a primary local oscillation signal PO to both the transmission mixer 19 and the first reception mixer 29 (column 3, line 36, through column 4, line 17). Sasaki does not disclose or fairly suggest a directional coupler. It would appear that the primary local oscillation signal PO of Sasaki is fanned out directly to both the transmission mixer 19 and the first reception mixer without any intervening circuitry. Sasaki does not suggest a need or desire for a directional coupler.

Wolff discloses a directional coupler such as branch line, rat race, and Wilkinson couplers (page 214, section 8.4.1). Applicant has discussed the disadvantages of the use of conventional directional couplers, including Wilkinson couplers (page 3, lines 9-18, of the specification).

Because Sasaki does not disclose or fairly suggest a need or desire for a directional coupler, Sasaki is not amenable to modification by Wolff to incorporate a directional coupler.

Thus, claims 1-37 are allowable over the prior art of record.

The Patent Office rejected claims 4 and 6 under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of Wolff and further in view of Vagher, U.S. Patent No. 6,362,685.

None of Sasaki, Wolff, or Vagher appears to disclose or fairly suggest claim 4’s subject matter “the directional coupler operating frequency range is greater than the output frequency of

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the local oscillator.” It appears that Vagher (figures 2 and 3 and col. 5, lines 17-42) discloses the directional coupler operating frequency range corresponds to the output frequency of the local oscillator but it does not appear disclosed or fairly suggested that “the directional coupler operating frequency range is greater than the output frequency of the local oscillator.” Thus, claim 4 is allowable over the prior art of record.

None of Sasaki, Wolff, or Vagher appears to disclose or fairly suggest claim 6’s subject matter “the directional coupler covers dual bands for dual band single output local oscillator configurations.” Vagher appears to disclose dual power amplifiers (Figure 12) but does not seem to disclose or fairly suggest dual bands for dual band signal output local oscillator configurations. Thus, claim 6 is allowable over the prior art of record.

The Patent Office is respectfully requested to reconsider and remove the rejections of the claims 1-18 under 35 U.S.C. 103(a) based on Sasaki in view of Wolff or in view of Wolff and Vagher, and to allow all of the pending claims 1-37 as now presented for examination. An early notification of the allowability of claims 1-37 is earnestly solicited.

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Respectfully submitted:

Walter J. Malinowski

Walter J. Malinowski

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Date

Reg. No.: 43,423

Customer No.: 29683

HARRINGTON & SMITH, LLP

4 Research Drive

Shelton, CT 06484-6212

Telephone: (203)925-9400, extension 19

Facsimile: (203)944-0245

email: wmalinowski@hspatent.com

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Clair W. F. Mian

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